

nervous tension, with spasticity of the voluntary muscles. The mind may be lucid, mental impressions being clear-cut and accompanied by actual euphoria. Tingling and hypoaesthesia in the extremities were often pronounced, and should the anoxia continue unrelieved, are replaced by numbness and marked muscular weakness.

In adults the onset of either periodic, or shallow and rapid breathing is ominous. When there is no retention of CO₂ in the body, however, the patient may feel no distress and make no complaint, although in great danger from acute oxygen want. Because of the insidious development of the condition described, the term "creeping" anoxemia has been chosen.

Attempts to control the above symptoms by administration of barbiturates or opiates are contraindicated, as they tend to increase respiratory depression and the degree of anoxemia.

Although only a supportive measure in the management of the bronchopneumonia patient, on the other hand, early oxygen inhalation is invaluable.

Boothby's observation of a drop in temperature following a patient's admission to the oxygen chamber has been confirmed. It is noteworthy that, although oxygen often relieves restlessness, it may occasionally increase the restlessness of a patient, owing to recovery of the higher centers. To avoid this, the percentage of oxygen should be raised slowly, *e. g.*, from 3 to 6 liters per minute in one hour.

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HEMORRHAGE AND SHOCK INCIDENT TO CESAREAN SECTION

Cesarean section is in great part responsible for the prevalence of a high maternal mortality in this country. The triumphs of modern surgery, and particularly the safety and success of the present-day laparotomy, have given the profession, as well as the laity, a false sense of security so far as cesarean section is concerned. It is not fully realized that cesarean section carries the risks of laparotomy in general, plus the hazards of a most unphysiologic method of delivery.

The dangers of hemorrhage, shock and infection, which are common to most laparotomies, are multiplied manifold in the case of abdominal delivery. In a recent review of nine hundred cesarean sections performed in Iowa, Plass¹ found that the maternal mortality was 7 per cent. Forty-nine and three-tenths per cent of these deaths were due to sepsis, 19 per cent to toxemia, and 20.7 per cent to hemorrhage and shock. Hemorrhage, also, undoubtedly plays an important part as a cause of death in the fatalities ordinarily attributed to toxemia. Dieckmann and Daily² recently made accurate measurements of the blood loss incident to cesarean section at the Chicago Lying-In Hospital. They

found that the quantity of blood lost ranged between 170 cubic centimeters and 1,410 cubic centimeters, the average being 546.7 cubic centimeters. In the hands of the occasional operator, this blood loss must, of course, be much greater.

Hemorrhage in cesarean section is undoubtedly due to the disturbance of the physiology of labor. It is a well-known fact that the uterine muscle is relatively insensitive to stimulation until the end of pregnancy. With the onset of labor there is an abrupt rise in the susceptibility of the uterus to mechanical stimuli, and to the influence of oxytocic drugs; this irritability increases during the progress of labor, and reaches its height during the course of the second stage. It seems, then, that it is distinctly unphysiologic to precipitate the third stage of labor on a uterine muscle which is unprepared even for the first stage. Hemorrhage, consequently, is to be expected when labor is eliminated, or terminated early in its course.

The above remarks are not presented as an argument in favor of cesarean section late in labor. It is, however, intended to point out that the wisdom of elective cesarean section is open to question, and that the burden of proof must be assumed by those who maintain that the best results are obtained when cesarean section is done at an "appointed time," rather than at the onset of labor.

The abrupt termination of the third stage is another radical departure from the normal. The incision in the uterus frequently encroaches on the placental site, especially in the classical section. It is, therefore, necessary to remove the placenta promptly in an effort to control the profuse bleeding from the incision, and from the coincident partial detachment of the placenta. This interference with the natural course of the third stage tends to cause hemorrhage in cesarean section, just as it does in vaginal delivery.

Shock in cesarean section is chiefly due to the following factors: general anesthesia, celiotomy, the sudden release of the amniotic fluid, the immediate delivery of the fetus and placenta, and the coincident unavoidable hemorrhage. Commonly associated obstetrical factors which further predispose to shock are exhaustion from prolonged labor, toxemia, antepartum hemorrhage, and overdistention of the uterus due to multiple pregnancy or polyhydramnios.

The foregoing review emphasizes the facts that cesarean section is often complicated by serious hemorrhage and shock, and that the hazard due to these complications can be lessened by a careful selection of cases for section, and by a close adherence to well-established obstetrical and surgical principles. Abdominal delivery is, however, fundamentally an unphysiologic procedure, and no care and skill in its performance can fully compensate for the profound disturbance created in the mechanism of labor. Hemorrhage and shock, therefore, should be anticipated in all cases of cesarean section, and adequate preparations be made to meet these emergencies before surgery is undertaken.

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¹ Plass, E. D.: Survey of Cesarean Sections in Iowa for Years 1930, 1931, and 1932, Preliminary Report, J. Iowa M. Soc., 25:586 (Nov.), 1935.

² Dieckmann, William J., and Daily, Edwin F.: Blood Loss During Cesarean Section, Am. J. Obst. and Gynec., 30:221 (Aug.), 1935.